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Phytoplankton and Bacterioplankton in Three Reservoirs (Northeastern Bulgaria) Recommended as Potential Reference Sites According to the Water Framework Directive of EU

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Abstract: Some trophic characteristics as chlorophyll-a, Secchi-disk transparency, turbidity, phytoplankton and bacterioplabkton abundances were investigated during spring and summer of 2005 in three reservoirs in northeastern Bulgaria, suggested by the experts of the Ministry of Environment and Waters (MEW) as potential reference sites. Different characteristics show differences in the assessment of the reservoir trophic status as only Tsonevo seems to be appropriate to reference site on the basis of the most of characteristics studied. Secchi-disk transparency seems to be inappropriate for assessment of the ecological status of the studied water bodies without considering its different components especially at the time of spring high waters. It is necessary to separate clearly different zones (water bodies) of reservoirs, which strongly depend on the morphometry, seasons, retention time and development of their shoreline. Phytoplankton (both abundance and composition) seems to be a good indicator for the differentiation of reservoir zones. Bacterial contribution to some of investigated variables (e.g. turbidity) and bacteria-algae relationships were also studied. Indication for top-down control of mixotrophic algae on bacteria was obtained under conditions of P-limitation.

Key words: reservoirs, phytoplankton, bacterioplankton, relationships, reference sites